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# **Happiness for Believers? Contextualising the Effects of Religiosity on Life-Satisfaction**

## **Abstract**

Many studies have suggested that higher levels of individual religiosity (as personal belief and as institutional practice) are associated with higher levels of personal life-satisfaction. These findings led to the conventional inclusion of religiosity into quantitative life-satisfaction analyses as control variable and the formulation of policy recommendations about community and personal well-being. However, samples have so far been restricted to within-country analyses disregarding relevant contextual influences.

This paper investigates the influence of personal religiosity (attitudinal and practiced) on life-satisfaction taking into account the effects of country-levels of the respective religiosity measures. Analysing data from 43 European and Anglo-Saxon societies obtained from the World Values Survey and employing a hierarchical-linear model controlling for relevant socio-economic factors, previous findings are strongly called into question. Positive effects of individual religiosity on life-satisfaction are rendered statistically insignificant once contextualisation effects are applied. However, a significant positive interaction effect is found for personal attitudinal religiosity and societal levels of religious belief and practice. Accordingly personal religiosity appears to be associated only with higher levels of life-satisfaction in societies where religiosity is higher on average as well. Instead of an intrinsic importance of individual religiosity, societal conformity mechanisms appear to be conducive to greater happiness levels.

**Keywords:** Happiness, Life-Satisfaction, Religiosity, Multilevel analysis

Studies of how religiosity influences different aspects of personal lives of individuals are not new, but have demonstrated in their widely varied manifestations that indeed, differences in levels of religiosity are associated with differences in a number of other variables, and in particular multiple aspects of well-being (Peterson & Webb 2006).

The ways in which different forms of religiosity may be related to such measures is a continuous point of debate. With regards to happiness or life-satisfaction, as one form of well-being, a seemingly consistent finding appeared to be emerging suggesting that higher religiosity is related to higher life-satisfaction. However, while studies with similar set-ups reproduced this result (see below), important distinctions between conceptually different types of religiosity have been demonstrated to be meaningful (e.g. Chamberlain & Zika 1998). In particular, intrinsic and extrinsic forms of religiosity differently affect the level of life-satisfaction (Peterson & Webb 2006, p. 112). Attitudinal evaluations of personal levels of religiosity tend to be positively associated with measures of subjective well-being (e.g. Ferris 2002). The same however is not true for practiced aspects of religiosity (such as for example church attendance, Lewis 2002), pointing to the relevance of distinguishing different mechanisms.

Additionally, most of the studies referred to only conduct analyses at the individual level. However, religion undoubtedly is not just a private affair. Max Weber (1922/1948, pp. 270) already describes concisely how contextual religious doctrines and practices affect the perception and attitudes of individuals regarding religion. Their practice in turn (especially changes across generations) affects the contextual doctrines in the longer run. Analyses that only focus on evaluations at the individual

level neglect this. The results stemming from them must therefore be treated with some caution. In this paper I aim to illustrate why the use of multi-level approaches is crucial to gain a proper understanding of the relationship between religiosity and life-satisfaction.

## **Introduction to happiness studies**

For decades traditional economic approaches dominated the study of people's desires and needs, driven by the concept of utility (Frey, 2008). The understanding was that the outcomes of market interactions represent the revealed preferences of individuals, thus rendering any direct measures of their well-being unnecessary (Bruni and Porta, 2005). Criticism has been applied regarding the strong assumptions relating to the market, its actors and consequential utility misprediction. Furthermore, so-called irrational actions of individuals have become reconsidered as standard, rather than an irregularity, supporting the growing interest in behavioural approaches to understanding people's interactions in markets (Bruni, 2006).

With the study of happiness, gaining momentum particularly in the 1990s, major assumptions of traditional economic models could be quantifiably refuted, such as the utility maximisation orientation of people, the sole focus on material resources or the voluntariness of unemployment (Frey and Stutzer, 2002, Veenhoven, 1999, Clark and Oswald, 1994). Through happiness approaches a more direct concept of individuals' well-being could be reintroduced in qualitative and quantitative analyses. The term re-introduced applies, considering that classic economic thinkers, such as Adam Smith, explicitly incorporated the need for measures of people's happiness and

well-being (1759/1966). Only following utilitarian approaches this conception was rejected and replaced by indirect concepts based on utility (Bruni and Porta, 2005).

Happiness as an instrument is useful, because it allows for the study of well-being in a multitude of domains. Psychologically and behaviourally oriented approaches often employ a notion of hedonic well-being, investigating experiences of pleasant and unpleasant affect (Kahnemann, 1999, Parducci, 1995)<sup>1</sup>. Medical uses consider physical characteristics of associated processes while cognitive concepts are based on self-evaluations of people's satisfaction with life or particular domains of it (Schwarz and Strack, 1999)<sup>2</sup>.

Certainly, neither of these approaches can capture the vastness of the idea of happiness or a good life (Brülde, 2007), even when incorporating eudaimonic concepts,<sup>3</sup> that are reflected in qualitative discourses (Waterman, 1993) or relevant for every individual (Ryff and Keyes, 1995). These understandings of happiness are not based on subjective evaluations, but emphasise particular notions of well-being, tending to focus on the autonomous awareness of humans leading their life (Ryan et al., 2008).

However, subjective cognitive conceptualisations of life-satisfaction have been shown to be meaningful in gaining a better understanding of people's motivations and determinants of individual well-being, health and satisfaction (Diener and Biswas-Diener, 2008). Despite certain limitations of empirical operationalisations (Schwarz and Strack, 1999), measures based on happiness concepts, in particular employing cognitive approaches, could be shown to represent meaningful foundations for inter-personal comparisons within large and diverse populations. While culturally based

differences apply<sup>4</sup>, the robustness of the measure of cross-country comparisons within specific contexts has been demonstrated well (Frey, 2008).

Using approaches of life-satisfaction a wide array of topics has been investigated and placed in new perspectives, including, for example, labour market processes (Di Tella and MacCulloch, 2006, Clark et al., 2001), environmental quality (Rehdanz and Maddison, 2008), work place organisation (Salanova et al., 2006) or the role of material satisfaction for the quality of life (Easterlin, 2001). Based on analyses of family structures, the role of religion for individuals' well-being has become a very interesting field of study (Waite and Lehrer, 2003). Far-reaching conclusions have been developed that are incorporated into many models of life-satisfaction as a convention. After introducing these conventions about the effect of religion on life-satisfaction in the following section, I will present a quantitative analysis to critically assess previous findings on which these assumptions rest, suggesting different research paths to the ones currently taken.

### **Religious people are happier: Previous findings**

Quantitative investigations into the effects of religion on happiness usually employ a cognitive approach of life-satisfaction. Having used different measures of religiosity (including personal evaluations of the importance of god and religion, reflections on religious spirituality or institutionalised practice through service participation) a variety of studies have found positive significant associations between the respective measure of religiosity and life-satisfaction<sup>5</sup> (Ferris, 2002, Francis et al., 2004, Gauthier et al., 2006). These findings are found to be robust to a number of individual socio-economic and attitudinal controls at the individual level.

A variety of explanations is given for these results. Religiosity might provide a safety net function, offering security and comfort particularly in difficult or uncertain life situations. The engagement in communal activities and the provision of a network of acquaintances and actual friends and supporters is a different, community-inclusion focused, perspective commonly invoked to explain the findings (Moghaddam, 2008).

The apparent robustness of the finding across the use of a number of different measures as well as their application to a number of different countries has rendered them influential. As a consequence, a variable reflecting religiosity is commonly included as a control variable in models investigating the influence of different factors on life-satisfaction (including econometric studies). Holder et al. (2010), found that school children aged eight to twelve who report higher levels of religious spirituality show substantially higher levels of happiness than their respective peers who show lower levels of religious belief and practice. This, they claim, suggests that education policy should promote a more prominent role of religion in schools again. Similarly, authors in the USA emphasize the consideration of religion's role in the establishment of healthy civic communities (e.g. Helliwell & Putnam, 2004).

While backed up through numerous studies and underlined with plausible explanations, such policy recommendations have to be critically assessed for a number of reasons that cast doubt about the results presented. The apparent robustness across measures is not as consistent as commonly assumed. For example, as Lewis & Cruise (2006) demonstrate that a change of the well-being indicator measure can render the previously found effects insignificant.

Furthermore, not all processes and orientations representing religiosity can be understood to have associations with well-being as clear-cut as those presented above (Swinyard et al., 2001). Differences have been found between understandings of religion as an end and religion as a process or means for example. Accordingly to the conceptualisation the respective relationship with life-satisfaction is constituted of different facets, making it more complex than assuming a simple, direct positive relationship. The relation of these effects may also be divergent across countries (pp. 25).

The latter finding draws attention to a particular deficiency in previous studies of religion and happiness: While using different types of samples within countries to investigate the representativeness of the findings, cross-country analyses have been limited. Where applied, differences between the countries regarding binary associations between happiness and religiosity could be partially observed (see for example Snoep, 2008). However, systematic investigations of whether differences between societal contexts exist are lacking. More importantly, there is no adequate investigation exploring whether the relationship found at the individual level is in any way dependent on contextual factors. However, it is very plausible that the importance of religion for life-satisfaction could vary with the importance religion plays within a country – especially when considering that the importance of contextual factors in the moderation of individual processes affecting life-satisfaction has been demonstrated for several relationships (for example: unemployment, Clark, 2003).

I will therefore proceed by undertaking an analysis that will investigate the relationship of religiosity on life-satisfaction, contextualising the individual-level



effects in the national level of religiosity (attitudinal and practiced). Considering a substantially large sample of countries, I expect to find changes in how personal religiosity affects life-satisfaction when incorporating the aggregate measures of national religiosity.

## **Data and Method**

### Data source and approach

Data for this analysis is selected from a pooled sample of the fourth (2000-2004) and fifth (2005-2007) wave of the World Values Survey (WVS, 2010).<sup>6</sup> The sample used includes countries from Europe (West and East) as well as Anglo-Saxon ones. The WVS provides a wider array of countries, however culturally different conceptions of happiness, as particularly demonstrated regarding Asian countries compared to European and North-American ones (Uchida et al., 2004, Lu and Gilmour, 2004)<sup>7</sup>, strongly suggest a limitation to countries where the concept can be applied in relatively robust relationships. At the same time, a sufficiently large number of cases is required to create a valid model which is granted with the selection of this sample of 43 countries<sup>8</sup>.

For the investigation a hierarchical linear model was used with the individual survey respondents of each country being contextualised according to the characteristics of the respective society.<sup>9</sup> Assumptions regarding linearity of indicators were checked and adjustments done where required (logarithm of GDP/cap).

### Measures

The dependent variable was life-satisfaction measured in the WVS by the question *"All things considered, how satisfied are you with your life as a whole these days?"*

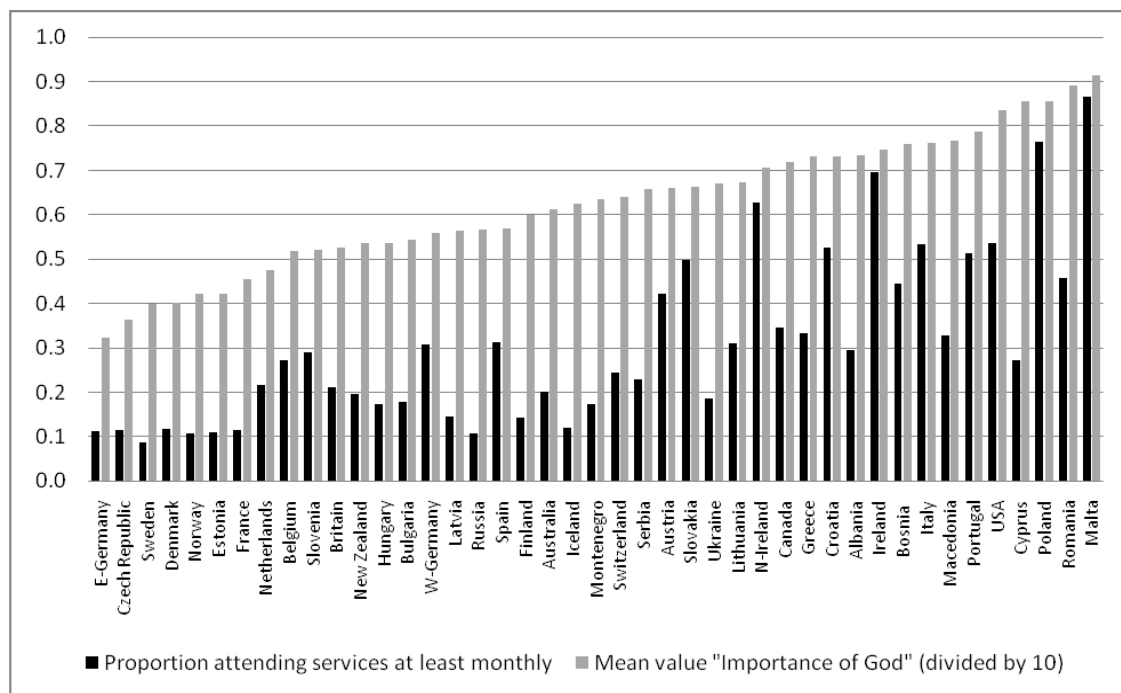
Responses were rated on a scale from 1 (completely dissatisfied) to 10 (completely satisfied).<sup>10</sup> Ideally it would be treated as an ordinal variable. However, Pittau et al. (2010) have illustrated that the use of the variable in ordinal and linear analyses does not yield substantially different results,<sup>11</sup> in particular when used within hierarchical models.

*Table 1: Overview of variables*

	Mean/%	S.D.	Min	Max
<b>Individual level (N= 74,703)</b>				
Life-Satisfaction	6.81	2.31	1	10
Sex (Female)	52.0%	0.499	0	1
Age	45.26	17.14	15	101
Age <sup>2</sup>	2342	1662	225	10201
Education	5.59	2.18	2	9
Income Scales	4.90	2.48	1	10
Importance of god	6.24	3.255	1	10
DV: attend monthly+	30.0%	0.458	0	1
DV: attend - monthly	40.1%	0.490	0	1
<b>Societal level (N= 43)</b>				
Average importance of god	6.27	1.48	3.24	9.15
Average Service attendance	0.308	0.194	0.086	0.866
LnGDP/cap	9.77	0.647	8.40	10.67
DV: Eastern Europe	n/a	n/a	0	1
DV: Protestant North	n/a	n/a	0	1
<p>Data comes from the fourth and fifth wave of the World Values Survey. Where countries participated in both waves, average values are used. Data is weighted to account for sample size differences between countries.</p> <p>Importance of God: "How important is God in your life? Please use this scale to indicate. 10 means "very important" and 1 means "not at all important."</p> <p>GDP: Average 2000-2005 according to IMF, constant prices</p> <p>Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"</p> <p>Sex: 0-male, 1-female</p> <p>Age: in years</p> <p>Education: Highest Educational Level attained (9 pt. scale)</p> <p>Income: Scale of Incomes (1..10)</p> <p>Attendance dummies: DV attend, monthly+ (attending religious services at least once a month), DV attend, monthly- (attending church services, but less than once a month) ; base category (not attending)</p> <p>Average Service attendance: Proportion participating in services at least once a month</p>				

At the individual level attitudinal religiosity was operationalised through the response to the WVS question "*How important is God in your life?*" rated from 1 (not at all important) to 10 (very important).<sup>12</sup> Institutionally practiced religiosity was operationalised through two dummy variables representing those who attend religious services at least monthly and those who attend religious services, but less often than at least once a month with those not attending religious services as the

reference group. The effect of the predictors was controlled for by several relevant socio-economic variables: Sex, Age, Age-Squared, Education and Income.<sup>13</sup> Age-Squared is required as a control due to the conventionally observed parabolic relationship between age and life-satisfaction.<sup>14</sup>



*Figure 1: Practiced and attitudinal religiosity across the countries included (sorted according to their mean level of attitudinal religiosity)*

At the aggregate level attitudinal religiosity as context factor was operationalised as the mean of the "importance of god" responses of the individuals within a particular country. Context levels of practiced religiosity were operationalised as the proportion of respondents attending church services at least once a month within a country. As figure 1 shows, there is a very substantial variation in religiosity levels across the countries in this analysis. It is also noteworthy, that there are substantial differences between the ranking according to attitudinal compared to practiced religiosity.

Being aware of the important context influences of material provisions for life-satisfaction analyses (Easterlin, 1995), a control was added for a country's logarithmic gross domestic product per capita (IMF, constant price levels, average 2000-2005). Because of generally lower levels of life-satisfaction in Eastern European societies compared to Western ones, a country dummy for Eastern Europe was included in all analyses as well.<sup>15</sup> Finally, to further check the robustness, another regional dummy variable was included to represent the Northern-European, Protestant countries. Substantial changes in the model would have suggested that the major determinant of the results would have been the processes within these particular countries – cautioning about a joint analysis with the other countries. Non-substantial differences would have supported support the robustness of the model.

## **Results<sup>16</sup>**

The models applied either considered attitudinal religiosity (table 2) or practiced religiosity (table 3) as the relevant context factor. For each of them, four specifications were used, differentiating models with and without interaction effects respectively for only one type of religiosity as individual-level predictor (analogous to the context factor) and the inclusion of both, practiced and attitudinal religiosity.

The effects of the control variables were consistent and mainly within the conventional expectations. The commonly found positive association of higher education and income with life-satisfaction as well as with a country's GDP/cap was confirmed. The negative significant effect of age despite the age<sup>2</sup> control was noteworthy, however it may be a result of the particular age structure of the sample.

Table 2: Hierarchical linear model – Context: Attitudinal religiosity

Dependent variable: Life-Satisfaction	Importance of god		Importance of god and service attendance	
	Non-Interaction	Interaction	Non-Interaction	Interaction
Intercept	-3.683 (-1.32)	-3.694 (-1.32)	-3.382 (-1.22)	-2.894 (-0.87)
Societal Level				
Av. Importance of God	0.067 ( 1.20)	0.068 ( 1.22)	0.045 ( 0.80)	0.041 ( 0.71)
DV: Eastern Europe	-0.641 (-1.76)	-0.641 (-1.76)	-0.664 (-1.84)	-0.713 (-1.71)
LnGDP/cap	1.062 ( 4.10)***	1.064 ( 4.11)***	1.039 ( 4.05)***	0.994 ( 3.20)**
Fixed Individual				
Sex	0.007 ( 0.36)	0.002 ( 0.09)	0.002 ( 0.11)	-0.006 (-0.28)
Age	-0.052 (-8.29)***	-0.052 (-8.44)***	-0.052 (-8.33)***	-0.052 (-8.42)***
Age <sup>2</sup>	0.001 ( 8.03)***	0.001 ( 8.17)***	0.001 ( 8.03)***	0.001 ( 8.15)***
Education	0.056 ( 6.12)***	0.056 ( 6.25)***	0.055 ( 5.98)***	0.054 ( 6.00)***
Income	0.187 ( 13.1)***	0.189 ( 13.3)***	0.186 ( 13.2)***	0.187 ( 13.3)***
Importance of God	0.058 ( 9.05)***		0.046 ( 7.41)***	
DV: attend, monthly+			0.203 ( 3.98)***	
DV: attend, - monthly			0.063 ( 1.79)	
Random Individual				
Importance of God		-0.490 (-2.07)*		-0.377 (-1.84)
X Av. Importance of God		0.019 ( 2.99)**		0.017 ( 2.76)**
X DV: Eastern Europe		0.022 ( 0.86)		0.016 ( 0.70)
X LnGDP/cap		0.043 ( 2.01)		0.032 ( 1.72)
DV: attend, monthly+				-1.542 (-0.67)
X Av. Importance of God				0.021 ( 0.76)
X DV: Eastern Europe				0.105 ( 0.45)
X LnGDP/cap				0.160 ( 0.74)
DV: attend, - monthly				0.866 ( 0.62)
X Av. Importance of God				-0.026 (-1.22)
X DV: Eastern Europe				-0.027 (-0.19)
X LnGDP/cap				-0.065 (-0.50)
Reduction in Error				
Within societies	0.057	0.060	0.058	0.063
Between societies	0.808	0.808	0.813	0.809
N	74,703 individuals in 43 societies			
Significance values: *p<0.05, **p<0.01, ***p<0.001. Entries are un-standardised regression coefficients with t-ratios in parentheses. Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are un-centred. Reduction in Error is calculated as proportional change in the random variance component relative to the null-model. Calculations done using HLM 6.06. Data comes from the fourth and fifth wave of the World Values Survey. Where countries participated in both waves, average values are used. Data is weighted to account for sample size differences between countries. Importance of God: "How important is God in your life? Please use this scale to indicate. 10 means "very important" and 1 means "not at all important." GDP: Average 2000-2005 according to IMF, constant prices Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?" Sex: 0-male, 1-female Age: in years Education: Highest Educational Level attained (9 pt. scale) Income: Scale of Incomes (1..10) Attendance dummies: DV attend, monthly+ (attending religious services at least once a month), DV attend, monthly- (attending church services, but less than once a month) : base category (not attending)				

When not including interaction effects between societal variables and individual-level factors, religiosity appears to have the effect predicted by the majority of studies cited above. Higher levels of individual attitudinal religiosity (0.058\*\*\*) as well as practiced religiosity were associated with higher levels of life-satisfaction. It seems that stronger internal religious attitudes and more extensive participation in institutionalised practice positively affect life-satisfaction taking into account the control factors. It should be noted that when including both attitudinal and practiced religiosity, only attending at least monthly in religious services (0.203\*\*\*) was significantly different to not attending. When only focusing on practiced religiosity also attending services at all was associated with higher life-satisfaction (0.161\*\*\*) than not attending services (less than attending more often though: 0.398\*\*\*).

At the aggregate level, no significant effects could be observed however. Neither higher average importance of god nor higher service attendance rates were associated with increased individual life-satisfaction in the model. While the latter remained true also when including contextualising interactions, the individual-level relationships changed. When contextualising the individual importance of god with the average importance, the individual-level direct effect's significance and size were strongly reduced and the sign reverted (-0.490\*) suggesting a negative effect of higher personal attitudinal religiosity on life-satisfaction. At first sight this might appear to be presenting a contradictory finding to previously discussed individual-level analyses. However, this negative effect only applied meaningfully to certain countries, with a specific modification of the aggregate variables combined with low levels of average religiosity. Thus, it is likely to find a reduction in this effect with small alterations in the aggregate explanatory variables. It would therefore be inadequate to discuss it as a definitive result. This is further substantiated when

Table 3: Hierarchical linear model – Context: Practiced religiosity

Dependent variable: Life-Satisfaction	Service attendance		Service attendance and importance of god	
	Non-Interaction	Interaction	Non-Interaction	Interaction
Intercept	-3.101 (-1.33)	-2.224 (-0.78)	-3.803 (-1.60)	-2.488 (-0.87)
Societal Level				
Service attendance	0.511 ( 1.59)	0.255 ( 0.76)	0.407 ( 1.25)	0.689 ( 1.96)
DV: Eastern Europe	-0.691 (-2.09)*	-0.761 (-1.98)	-0.630 (-1.88)	-0.730 (-1.91)
LnGDP/cap	1.001 ( 4.28)***	0.930 ( 3.33)**	1.067 ( 4.60)***	0.958 ( 3.45)**
Fixed Individual				
Sex	0.027 ( 1.30)	0.023 ( 1.10)	0.002 ( 0.12)	-0.006 (-0.26)
Age	-0.053 (-8.30)***	-0.053 (-8.28)***	-0.052 (-8.33)***	-0.052 (-8.40)***
Age <sup>2</sup>	0.001 ( 8.17)***	0.001 ( 8.19)***	0.001 ( 8.03)***	0.001 ( 8.11)***
Education	0.052 ( 5.95)***	0.051 ( 5.83)***	0.055 ( 5.99)***	0.055 ( 6.03)***
Income	0.185 ( 12.8)***	0.184 ( 12.9)***	0.186 ( 13.2)***	0.187 ( 13.3)***
Importance of God			0.045 ( 7.39)***	
DV: attend, monthly+	0.398 ( 7.33)***		0.202 ( 3.96)***	
DV: attend, - monthly	0.161 ( 4.50)***		0.062 ( 1.79)	
Random Individual				
Importance of God				-0.077 (-0.44)
X Service attendance				0.158 ( 3.37)**
X DV: Eastern Europe				-0.004 (-0.16)
X LnGDP/cap				0.008 ( 0.49)
DV: attend, monthly+		-1.700 (-0.82)		-1.134 (-0.55)
X Service attendance		0.463 ( 2.25)*		0.076 ( 0.39)
X DV: Eastern Europe		0.135 ( 0.61)		0.078 ( 0.36)
X LnGDP/cap		0.193 ( 0.97)		0.130 ( 0.65)
DV: attend, - monthly		0.362 ( 0.30)		0.392 ( 0.31)
X Service attendance		-0.021 (-0.13)		-0.252 (-1.50)
X DV: Eastern Europe		0.001 ( 0.01)		0.003 ( 0.02)
X LnGDP/cap		-0.021 (-0.18)		-0.027 (-0.22)
Reduction in Error				
Within societies	0.052	0.055	0.058	0.063
Between societies	0.824	0.815	0.819	0.819
N	74,703 individuals in 43 societies			
Significance values: *p<0.05, **p<0.01, ***p<0.001. Entries are un-standardised regression coefficients with t-ratios in parentheses. Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are un-centred. Reduction in Error is calculated as proportional change in the random variance component relative to the null-model. Calculations done using HLM 6.06. Data comes from the fourth and fifth wave of the World Values Survey. Where countries participated in both waves, average values are used. Data is weighted to account for sample size differences between countries. Importance of God: "How important is God in your life? Please use this scale to indicate. 10 means "very important" and 1 means "not at all important." GDP: Average 2000-2005 according to IMF, constant prices Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?" Sex: 0-male, 1-female Age: in years Education: Highest Educational Level attained (9 pt. scale) Income: Scale of Incomes (1..10) Attendance dummies: DV attend, monthly+ (attending religious services at least once a month), DV attend, monthly- (attending church services, but less than once a month) : base category (not attending)				

including the variables controlling for service attendance (which themselves are not significant anymore), where the direct individual-level effect became statistically insignificant. A direct effect of individual-level religiosity was therefore not prominently and robustly observable in the interaction models, as it was in previous studies.

At the same time however, a positive, significant interaction effect (0.017\*\*) between context attitudinal religiosity and personal importance of god could be observed. Higher levels of aggregate levels were found to be associated with a positive impact of personal attitudinal religiosity on life-satisfaction. So for higher levels of attitudinal religiosity in a country, a positive effect of personal attitudinal religiosity could be expected. This interaction effect suggests that the relationship between attitudinal religiosity and life-satisfaction varies across countries according to contextual levels of attitudinal religiosity. No such interaction effect was found between average attitudinal religiosity and personal service attendance or for any other indicators.

When contextualising for practiced religiosity, the previously found significant effects at the individual level for importance of god and service attendance also became insignificant. When not including attitudinal religiosity, a significant positive interaction effect could be found for high individual attendance and aggregate attendance (0.463\*). This would suggest that a positive relation between personal attendance and life-satisfaction could be expected when country attendance levels were higher. This effect however disappeared when including individual attitudinal religiosity (comparable to the disappearing negative effect of individual-level belief in god, when having contextualised for attitudinal religiosity).



A significant moderating effect between individual importance of god and context practiced religiosity could be observed (0.158\*\*). Higher levels of national service attendance were associated with a positive impact of personal attitudinal religiosity on life-satisfaction. This is important to notice, as the reverse was not the case (see above). Average importance of god moderated the relationship of personal importance of god with life-satisfaction, but not actual personal practice.

Context levels of service attendance on the other side affected the relationship of personal attitudinal religiosity. This suggests that the role personal attitudinal religiosity plays for life-satisfaction is dependent on how much institutionalised religious practice occurs within the country.

Finally, it should be noted that the results remained robust even when including the dummy variable controlling for Northern-Protestant countries<sup>17</sup>. Only one substantial change could be observed rendering context service attendance directly and positively related to personal life-satisfaction. This suggests that the countries controlled for are somewhat different to the others included in this model regarding the investigated relationships. This was also represented by significant interaction than monthly (all positive). However, all other controls and the main variables of interest remained unaffected by the inclusion, suggesting that the results can be interpreted with some confidence.

## Discussion

The analyses presented above strongly suggest that the often conventionally accepted understanding of religiosity as positively influencing personal life-satisfaction must be questioned. The positive individual-level effects found disappear when contextualising them with a country's level of religiosity. The relationship between personal religiosity and life-satisfaction is not independent of contextual factors. A significant interaction can be observed in the analyses presented in this paper, suggesting that average levels of religiosity in a country affect the individual-level relationship.

Personal practiced religiosity (service attendance) does not seem enhance life-satisfaction with higher levels of average attitudinal religiosity. However, people tend to experience life-satisfaction enhancing effects when they place higher importance in god while living in a country where attendance of religious services is higher. These findings suggest that positive effects of religiosity may not be intrinsic. For the countries sampled, people do not appear to be happier, because they, individually, are more religious. People who place a higher importance in god however are happier when they live in a country where others do as well. Furthermore, when many people in the country attend religious services regularly, their happiness also is found to be higher.

As the reverse is not the case – people who attend services more often are not happier when the average personal level of importance of god is higher – it appears to be that happiness through religiosity can mainly be derived through conforming to the standard in their country – in particular the visible standard. Similar findings have

been presented for the role of values on life-satisfaction by Man-Wai Li (2008) who found that certain value orientations only enhance happiness when the cultural settings of the country are conducive.

The scope of this paper is limited however and further research required. Qualitative studies could closely assess which mechanisms are underlying the processes found in the analyses presented here. Further quantitative investigations should aim at differentiating regional groups and more closely investigating how differences based on the Protestant Northern European countries may affect the relationships. Beyond that the inclusion of countries from other regions of the world would be insightful, but has to be critically assessed regarding comparability of data and processes. Also, an investigation able to distinguish religious denominations adequately may be meaningfully affecting the results (also with regards to the heterogeneity of denominations in a country) – across and within countries. Furthermore, a differentiated analysis should be employed in which smaller aggregate units than country-level based ones are used. While effects could be observed based on national averages here, it is likely that important contextualisations occur at a more regional or local level, in particular regarding service attendance and communal characteristics.

A problem not addressed in the analyses of this paper is the question of endogeneity. In the model I propose religiosity to be a determinant of life-satisfaction, however it is well conceivable that life-satisfaction levels (that are also shaped by many other factors than the once used here) affect the likelihood of being more or less religious. Using panel data should be helpful in clarifying this question and would provide for a potentially very insightful further analysis.

Despite these current shortcomings, this paper demonstrates a strong imperative to reconsider the conventional use of religiosity in happiness analyses relying on individual-level processes only. Positive effects of individual religiosity on individual life-satisfaction may not be intrinsic, but, as the contextualising analyses suggest, due to compliance processes within the environment regarding the conventional extent of religiosity. This should particularly caution policy recommendations based on investigations that only consider the individual level and suggest greater importance on religion in order to increase life-satisfaction, as absolute levels might not be the main determinants. Further research should more closely investigate the precise mechanisms of the processes associated with individuals' evaluations of religiosity in relation to societal levels, in order to accurately understand whether religiosity affects life-satisfaction only indirectly, through direct intrinsic mechanisms or a combination of both.

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## Endnotes

<sup>1</sup> Usually operationalised through Experience-Sampling-Methods (ESM). For a review see Scollon et al. (2003).

<sup>2</sup> Usually operationalised through survey questioning.

<sup>3</sup> Based in an Aristotelian tradition regarding a good life and happiness as process-based with autonomy and intrinsic motivations determining a person's goal-orientations (Ryan et al., 2008)

<sup>4</sup> This has been shown to be particularly relevant in comparisons between European and Anglo-Saxon conceptions of happiness compared to dominant understandings in Asian societies (Uchida et al., 2004, Lu and Gilmour, 2004).

<sup>5</sup> It should be noted however that the magnitude of the effect has been estimated within a wider range from small to medium-large effects.

<sup>6</sup> Where data was available for a country in both waves, the average values are used. Considering the relative stability over time of the measures employed, this method appears to be adequate and is commonly undertaken with this data

<sup>7</sup> The main feature of this distinction – though more complex – these studies suggest is a stronger process-orientation regarding happiness embedded in certain ways of leading a life for Asian study participants, whereas European and North-American participants emphasise an ends-orientation, where happiness is embodied in particular achievements.

<sup>8</sup> Based on preliminary analysis to check necessary model assumptions two outliers were deleted because of the undue influence of their level of economic development (operationalisation presented below), substantially increasing deviations from linearity assumptions. The countries are Moldova and Luxembourg (being very substantially below and above the levels of other countries in the sample respectively). When included in the analysis this undue effect is reflected in the emergence of a positive, significant interaction effect of LN GDP/cap on individual attitudinal religiosity (compare to table 2 final model). Also the dummy variable for Eastern European countries at the aggregate level becomes statistically significant. Considering this change in results, based on the inclusion of two countries that increase the violation of statistical assumptions in the model, it is not appropriate to formulate interpretations based on such a model. Therefore the results presented in this paper are based on computations excluding the Moldova and Luxembourg.

<sup>9</sup> All calculations were conducted using HLM 6.06.

<sup>10</sup> While appearing to be a rather crude measure at first sight, several studies have suggested its robustness (Frey, 2008) when question-order framing effects were controlled for (Schwarz and Strack, 1999).

<sup>11</sup> This applies even to the use of the variable with a 4-point response scale only.

<sup>12</sup> Alternative variables available from the WVS have been employed, such as importance of religion or the significance of religion in the upbringing of children. The results in the analyses were not different substantially to the ones obtained using the indicator presented here.

<sup>13</sup> For the exact operationalisation and coding please refer to table 1.

<sup>14</sup> The variables chosen have very low levels of non-response (< 5%) with the exception of income (which is with approximately 12% at an acceptable level compared to experiences

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with income variables from other surveys – mainly due to the response being a subjective evaluation supposedly). The results are therefore potentially somewhat biased, with particularly higher-income respondents tending to not reveal the level of their income (and very low income respondents to some extent as well). This bias exists, however the use of the income variable does not appear to be inappropriate for the purpose of this paper – questioning the acclaimed role of religiosity in quantitative models estimating life-satisfaction. As those usually also contain an income variable, the inclusion seems appropriate. In future analyses methods of imputation might be considered. There are no missing value for the aggregate variables.

<sup>15</sup> As can be seen in tables 2 and 3, the variable does not provide directly measurable effects that should qualify the robustness of the analysis. As a control it is important to be retained however and it should be noted that the main effect (which in itself does not pose a validity problem, as no significant interaction effects regarding the predictors can be observed) is significant usually at the 10% level.

<sup>16</sup> Based on the zero-model 78.8% of the variation in the dependent variables is located at the individual level and 21.2% at the societal level of analysis.

<sup>17</sup> Detailed results are available upon request from the author.